

## CLAIMS:

1. A hearing prosthesis system comprising:  
a first housing containing a primary signal processor, that receives signals  
5 output by a microphone; and  
a plurality of second housings that are removably connectable to the first housing;  
wherein only one of said second housings is connectable to said first housing at any one time and further wherein at least one of said second housings has a user  
10 interface that provides control of one or more features of the operation of the primary signal processor.
2. The hearing prosthesis system of claim 1 wherein one or more of said plurality of second housings contains a power supply for at least some of the components of the  
15 prosthesis.
3. The hearing prosthesis system of claim 1 or claim 2 wherein one or more of said plurality of second housings contains a power supply and has a user interface that provides control of one or more features of the primary signal processor.  
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4. The hearing prosthesis system of any one of the preceding claims wherein one or more of said plurality of second housings is connectable by an electrically conducting lead to a remote module housing a power supply.
- 25 5. The hearing prosthesis system of any one of the preceding claims wherein one or more of said plurality of second housings is connectable by an electrically conducting lead to a remote module and wherein a user interface is provided on the remote module.
- 30 6. The hearing prosthesis system of any one of the preceding claims wherein one or more of said plurality of second housings is connectable by an electrically conducting lead to a remote module and wherein the one or more of said plurality of housings is provided with a user interface and the remote module houses a power supply.

7. The hearing prosthesis system of any one of the preceding claims wherein one or more of said plurality of second housings is connectable by an electrically conducting lead to a remote module and wherein the remote module houses a power supply and has a user interface.
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8. The hearing prosthesis system of any one of the preceding claims wherein one or more of said plurality of second housings contains signal receiver means for receiving signals from a remote module having a user interface.
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9. The hearing prosthesis system of claim 8 wherein the signal receiver means comprise signal receiver circuitry that receives and processes radio frequency signals output by the remote module.
10. The hearing prosthesis system of claim 8 or claim 9 wherein the second housing
- 15 contains a power source.
11. The hearing prosthesis system of any one of claims 8 to 10 wherein the remote module houses signal transmission circuitry that sends radio frequency signals to the second housing in response to adjustments made to the user interface.
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12. The hearing prosthesis system of any one of the preceding claims wherein one or more of said plurality of second housings contains signal transceiver means for receiving and sending signals from and to a remote module having a user interface.
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13. The hearing prosthesis system of claim 12 wherein the signal transceiver means comprises signal transceiver circuitry that receives and sends radio frequency signals from and to the remote module.
14. The hearing prosthesis system of claim 12 or claim 13 wherein the remote
- 30 module houses signal transceiver circuitry that sends and receives radio frequency signals to and from the second housing in response to adjustments made to the user interface.
15. The hearing prosthesis system of any one of the preceding claims wherein one
- 35 or more of said plurality of second housings has a visual display.

16. The hearing prosthesis system of claim 15 wherein the one or more of said plurality of second housings also has a power supply and/or a user interface.

17. The hearing prosthesis system of claim 15 or claim 16 wherein the visual display comprises one or more light emitting diodes (LEDs) and/or a liquid crystal display (LCD).

18. The hearing prosthesis system of any one of claims 15 to 17 wherein the visual display provides a recipient of the system or their carer with information about the performance of one or more aspects of the prosthesis system.

19. The hearing prosthesis system of any one of the preceding claims wherein one or more of said plurality of second housings has a user interface that is removably mounted to the second housing.

20. The hearing prosthesis system of claim 19 wherein a plurality of different user interfaces are connectable to said second housing.

21. The hearing prosthesis system of claim 20 wherein only one user interface is connectable to the second housing at any one time.

22. The hearing prosthesis system of any one of claims 4 to 14 wherein the remote module has a visual display.

23. The hearing prosthesis system of claim 22 wherein the visual display comprises one or more light emitting diodes (LEDs) and/or a liquid crystal display (LCD).

24. The hearing prosthesis system of claim 22 or claim 23 wherein the visual display provides a recipient of the system or their carer with information about the performance of one or more aspects of the prosthesis system.

25. The hearing prosthesis system of any one of the preceding claims wherein the first housing containing the primary signal processor is not provided with a user interface.

26. The hearing prosthesis system of any one of claims 1 to 24 wherein a user interface is provided on the first housing.
27. The hearing prosthesis system of any one of the preceding claims wherein the  
5 user interface comprises one or more push buttons or switches and/or one or more dials or rotary controls.
28. The hearing prosthesis system of claim 27 wherein the user interface comprises a push button that activates and/or deactivates the primary signal processor and/or  
10 selects the primary signal processor programme.
29. The hearing prosthesis system of claim 27 or claim 28 wherein the user interface comprises a dial that allows adjustment of the volume and sensitivity of the primary signal processor.  
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30. The hearing prosthesis system of any one of claims 27 to 29 wherein the user interface comprises a further push button that allows selection of whether input to the primary signal processor is provided by the microphone, a telecoil or a mixture of inputs.  
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31. The hearing prosthesis system of any one of the preceding claims wherein the user interface incorporates at least one tactile position control that, through its position, provides feedback to the recipient and/or their carer as to the setting of that control.
- 25 32. The hearing prosthesis system of claim 31 wherein the tactile position control comprises a switch that is movable between at least two settings.
33. The hearing prosthesis system of any one of claims 1 to 26 wherein the user interface comprises a first three-position switch that allows a recipient and/or their  
30 carer to select which speech programme is to be used, a dial that allows adjustment of the volume and sensitivity of the primary signal processor, and a second three-position switch which allows a recipient and/or their carer to set whether the primary signal processor is receiving input from the microphone, a telecoil, or a mix of such inputs.
- 35 34. The hearing prosthesis system of any one of the preceding claims wherein the user interface is substantially enclosed within a resiliently flexible cover.

35. The hearing prosthesis system of any one of the preceding claims wherein the first housing containing the primary signal processor unit is connectable to more than one type of power supply.
- 5 36. The hearing prosthesis system of any one of the preceding claims wherein the second housing is connectable to the first housing in at least two orientations and/or at least two configurations.
- 10 37. The hearing prosthesis system of any one of the preceding claims wherein at least the first housing and the second housing are positionable on the ear of the recipient.
- 15 38. The hearing prosthesis system of any one of the preceding claims comprising a cochlear implant system.
39. A hearing prosthesis comprising:  
a first housing containing a primary signal processor that receives signals output by a microphone; and  
20 a second housing removably connectable to the first housing;  
wherein a user interface is provided on the second housing that provides control of one or more features of the operation of the primary signal processor.
- 25 40. The hearing prosthesis of claim 39 wherein the second housing includes a power supply.
41. The hearing prosthesis of claim 39 or claim 40 wherein the second housing is connectable to a remote module.
- 30 42. The hearing prosthesis of claim 41 wherein the remote module has a further user interface.
43. The hearing prosthesis of claim 42 wherein the further user interface of the remote module is removably or non-removably mounted on the remote module.
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44. The hearing prosthesis of claim 42 or claim 43 wherein the further user interface of the remote module controls different features of the hearing prosthesis to the features controlled by the user interface of the second housing.

5 45. The hearing prosthesis of claim 42 or claim 43 wherein the further user interface of the remote module controls some or all of the same features of the hearing prosthesis that are controlled by the user interface of the second housing.

46. The hearing prosthesis of any one of claims 41 to 45 wherein the second  
10 housing user interface is rendered partially or fully inoperable when the remote module is used in conjunction with the second housing of the hearing prosthesis.

47. The hearing prosthesis of claim 42 wherein the further user interface is mountable to both the remote module and to the second housing.

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48. The hearing prosthesis of any one of claims 41 to 47 wherein the remote module has a visual display.

49. The hearing prosthesis of claim 48 wherein the visual display comprises one or  
20 more light emitting diodes (LEDs) and/or a liquid crystal display (LCD).

50. The hearing prosthesis of claim 48 or claim 49 wherein the visual display provides a recipient of the system or their carer with information about the performance of one or more aspects of the prosthesis.

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51. A hearing prosthesis comprising:

a first housing containing a primary signal processor that receives signals output by a microphone; and

a remote module;

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wherein a user interface is provided on the remote module that provides control of one or more features of the operation of the primary signal processor.

52. The hearing prosthesis of claim 51 comprising a one-way or two-way wireless communication between the remote module and the primary signal processor.

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53. The hearing prosthesis of claim 51 wherein signals are transmitted from the remote module to the primary signal processor and/or from the primary signal processor to the remote module using one or more cables or through a radio frequency transmission system.
- 5 54. The hearing prosthesis of anyone of claims 51 to 53 wherein the user interface is removably or non-removably mounted to the remote module.
- 10 55. The hearing prosthesis of any one of claims 39 to 54 wherein the user interface comprises one or more push buttons or switches and/or one or more dials or rotary controls.
- 15 56. The hearing prosthesis of claim 55 wherein the user interface comprises a push button that activates and/or deactivates the primary signal processor and/or selects the primary signal processor programme.
- 20 57. The hearing prosthesis of claim 55 or claim 56 wherein the user interface comprises a dial that allows adjustment of the volume and sensitivity of the primary signal processor.
- 25 58. The hearing prosthesis of claim 56 or claim 57 wherein the user interface comprises a further push button that allows selection of whether input to the primary signal processor is provided by the microphone, a telecoil or a mixture of inputs.
- 30 59. The hearing prosthesis of any one of claims 39 to 54 wherein the user interface incorporates at least one tactile position control that, through its position, provides feedback to the recipient and/or their carer as to the setting of that control.
60. The hearing prosthesis of claim 59 wherein the tactile position control comprises a switch that is movable between at least two settings.
- 35 61. The hearing prosthesis of any one of claims 39 to 54 wherein the user interface comprises a first three-position switch that allows a recipient and/or their carer to select which speech programme is to be used, a dial that allows adjustment of the volume and sensitivity of the primary signal processor, and a second three-position switch which

allows a recipient and/or their carer to set whether the primary signal processor is receiving input from the microphone, a telecoil, or a mix of such inputs.

62. The hearing prosthesis of any one of claims 39 to 61 wherein the user interface  
5 is substantially enclosed within a resiliently flexible cover.

63. The hearing prosthesis of any one of claims 39 to 62 wherein at least the first housing and the second housing are positionable on the ear of the recipient.

10 64. The hearing prosthesis of any one of claim 39 to 63 comprising a cochlear implant.

65. A speech processing unit for a hearing prosthesis recipient, the speech processing unit comprising:

15 a main part configured for wearing behind an ear of the hearing prosthesis recipient, the main part including a primary signal processor for carrying out primary signal processing functions associated with the speech processing unit; and

a replaceable part being removably connectable with the primary part, the replaceable part including a user interface for communication with the primary signal  
20 processor.

66. A speech processing unit for a cochlear implant recipient, the speech processing unit comprising:

25 a main part configured for wearing behind an ear of the cochlear implant recipient, the main part including a primary signal processor for carrying out primary signal processing functions associated with the speech processing unit; and

a replaceable part being removably connectable with the primary part, the replaceable part including a battery compartment and user interface for communication with the primary signal processor.